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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/021,443

12/19/2001

Charles L. Gray JR.

2093

7590

09/24/2004

LORUSSO & LOUD
3137 Mount Vernone Avenue
Alexandria, VA 22305

EXAMINER

HOOK, JAMES F

ART UNIT

PAPER NUMBER

3752

DATE MAILED: 09/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/021,443

Applicant(s)

GRAY, CHARLES L. 

Examiner

James F. Hook

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-8,11,12,14 and 16-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1, 3, 5-8, 11, 12, 14, and 16-20 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn. The following rejection is in response to the amendment filed on August 2, 2004 which is entered and considered in the rejection below.

Specification

The amendment filed August 2, 2004 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the additional language setting forth in the claims that the bladder is "in the form of a non-bellows bag" is considered new matter when such language was not found in the specification as originally filed where the mere absence of describing one embodiment as a bladder without setting forth it is a bellows is not considered support for the statement "a non-bellows bag" especially when the drawings as originally filed only show embodiments where the side wall is in some way undulated which essentially is a bellows bag. Therefore, without the language that the bladder can be a non-bellows bag, and no suggestion in the originally filed drawings that the bag was contemplated without undulations or bellows, such language is considered new matter.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

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The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 3, 5-8, 11, 12, 14, and 16-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. As set forth in the objection above, the specification and drawings do not provide support for the language "in the form of a non-bellows bag" in independent claims 1 and 14, and therefore such is considered new matter.

The following rejection is being applied to the current claim language including the new matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 5-8, 12, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drumm in view of Weber (012) and Taylor (3,526,580). The patent to Drumm discloses the recited hydraulic accumulator comprising a rigid tank 1, there is

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a first fixtures at the end of the tank for communication with a fluid through the bottom fixture in the area of reference numeral 5, a flexible metal non elastic bladder 2 in the form of a bellows made of a metal that separates the interior of the tank into a gas space 3 and a fluid space 4, and a shut off valve 7 will stop flow when the liquid hits a minimum value by contacting the bottom of the bladder 16, where the valve is provided with a spring to actuate it. The patent to Drumm discloses all of the recited structure with the exception of providing a port and valve to control gas flow into the gas chamber, forming the bladder as a non-bellows bag, forming the bladder with a plastic and metal layer, the thickness of the metal layer, and reversing whether the gas is inside or outside of the bladder. The patent to Weber discloses the recited hydraulic accumulator comprising a rigid tank 3, there are first and second fixtures at each end of the tank for communication with a fluid through the bottom fixture in the area of reference numeral 15 and with a gas through the top fixture in the area of reference numeral 5, a flexible metal non elastic bladder 9 in the form of a bellows made of a metal that separates the interior of the tank into a gas space 7 and a fluid space inside of the bladder, a shut off valve 20 will stop flow when the liquid hits a minimum value, and in figure 2 the bellows is reversed to contain the gas. It would have been obvious to one skilled in the art to modify the accumulator in Drumm by providing a second port and valve for the control of the amount of gas in the system as such would allow for more control over the function of the accumulator and make it better to accommodate different situations and a wider range of uses as suggested by Weber, and to reverse the position of the gas chamber to be outside the bellows as such is a known equivalent

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embodiment as suggested by Weber. The patent to Taylor discloses the recited hydraulic accumulator comprising a housing 10 provided with a non elastic bladder 20 which is formed of a plurality of layers including plastics and a metal film layer which is considered the equivalent of a foil layer when disposed on the plastic layer, and as seen in the drawings the bladder can be formed as a non-bellows bag. The use of any thickness of metal is considered an obvious choice of mechanical expedients where one skilled in the art would only need routine experimentation to arrive at optimum values to prevent the desired amount of leak and permeation resistance as such is merely a choice of mechanical expedients. It would have been obvious to one skilled in the art to modify the bladder in Drumm to be formed as a non-bellows bag provided with a metal and plastic layer as such is a known equivalent type of bladder used in accumulators as suggested by Taylor where such would provide for a cheaper and simpler bladder to that of the accordion pleated metal only bladder of Drumm.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Drumm in view of Weber (012) and Taylor as applied to claims 1, 3, 5-8, 12, and 17 above, and further in view of Legrand. The patent to Drumm as modified discloses all of the recited structure with the exception of having the spring surround the valve. The patent to Legrand discloses the recited hydraulic accumulator comprising a rigid tank 1, there are first and second fixtures at each end of the tank for communication with a fluid through the bottom fixture in the area of reference numeral 14 and with a gas through the top fixture in the area of reference numeral 7, a flexible metal non elastic bladder 13 in the form of a bellows made of a metal alloy called INCONEL that separates the interior of

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the tank into a gas space 18 and a fluid space 17 inside of the bladder, a shut off valve 37 will inherently stop flow when the liquid hits a minimum value and is surrounded by a spring that mounted within the second fixture attached to it, and where a vent 21b for any gas accumulated in the liquid side of the bellows can be vented. It would have been obvious to one skilled in the art to modify the location of the spring in Drumm as modified with a spring that surrounds the valve as suggested by Legrand to insure that the valve is provided with the right amount of force to properly control the shut off of fluid at a specific pressure as such is merely a choice of mechanical expedients to locate the spring outside of the valve rather than below, as such would also decrease the chance the valve would actuate at an improper angle when the wider spring bottom would prevent this.

Claims 14, 16, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drumm in view of Weber (012), Taylor, and Miller. The patent to Drumm discloses all of the recited structure above with the exception of providing a vent in the tank in communication with the liquid space, providing a port and valve to control gas flow into the gas chamber, forming the bladder as a non-bellows bag, the thickness of the metal layer, and reversing whether the gas is inside or outside of the bladder. The patent to Weber discloses the recited hydraulic accumulator comprising a rigid tank 3, there are first and second fixtures at each end of the tank for communication with a fluid through the bottom fixture in the area of reference numeral 15 and with a gas through the top fixture in the area of reference numeral 5, a flexible metal non elastic bladder 9 in the form of a bellows made of a metal that separates the interior of the tank

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into a gas space 7 and a fluid space inside of the bladder, a shut off valve 20 will stop flow when the liquid hits a minimum value, and in figure 2 the bellows is reversed to contain the gas. It would have been obvious to one skilled in the art to modify the accumulator in Drumm by providing a second port and valve for the control of the amount of gas in the system as such would allow for more control over the function of the accumulator and make it better to accommodate different situations and a wider range of uses as suggested by Weber, and to reverse the position of the gas chamber to be outside the bellows as such is a known equivalent embodiment as suggested by Weber. The patent to Miller discloses the recited hydraulic accumulator comprising a rigid tank 18, there are first and second fixtures 23,24 and the unmarked tube between reference numerals 22 and 27 for communication with a fluid through the bottom fixtures 23,24 and with a gas through the top fixture in the area of reference numeral 22, a bladder 20 in the form of a gas filled bladder separates the interior of the tank into a gas space and a fluid space inside of the bladder, and where a vent 27 for any gas accumulated in the liquid side of the bellows can be vented where the vent 27 is considered in the end of the tank. It would have been obvious to one skilled in the art to provide the tank in Drumm with a vent to allow for the release of any gas accumulated in the fluid space as suggested by Miller to allow the system to work more efficiently without the losses that could be accrued by having gas in the liquid space. The patent to Taylor discloses the recited hydraulic accumulator comprising a housing 10 provided with a non elastic bladder 20 which is formed of a plurality of layers including plastics and a metal film layer which is considered the equivalent of a foil layer when disposed

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on the plastic layer, and as seen in the drawings the bladder can be formed as a non-bellows bag. It would have been obvious to one skilled in the art to modify the bladder in Drumm to be formed as a non-bellows bag provided with a metal and plastic layer as such is a known equivalent type of bladder used in accumulators as suggested by Taylor where such would provide for a cheaper and simpler bladder to that of the accordion pleated metal only bladder of Drumm. The use of any thickness of metal is considered an obvious choice of mechanical expedients where one skilled in the art would only need routine experimentation to arrive at optimum values to prevent the desired amount of leak and permeation resistance as such is merely a choice of mechanical expedients. It would have been obvious to one skilled in the art to make the metal bladder in Drumm as modified to be of any thickness as such would only require routine experimentation to arrive at optimum values as such is merely a choice of mechanical expedients.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Drumm in view of Weber (012), Taylor, and Miller as applied to claims 14 and 16, 18, and 20 above, and further in view of Legrand. The patent to Drumm as modified discloses all of the recited structure with the exception of having the spring surround the valve. The patent to Legrand discloses the recited hydraulic accumulator comprising a rigid tank 1, there are first and second fixtures at each end of the tank for communication with a fluid through the bottom fixture in the area of reference numeral 14 and with a gas through the top fixture in the area of reference numeral 7, a flexible metal non elastic bladder 13 in the form of a bellows made of a metal alloy called INCONEL that separates the

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interior of the tank into a gas space 18 and a fluid space 17 inside of the bladder, a shut off valve 37 will inherently stop flow when the liquid hits a minimum value and is surrounded by a spring that mounted within the second fixture attached to it, and where a vent 21b for any gas accumulated in the liquid side of the bellows can be vented. It would have been obvious to one skilled in the art to modify the location of the spring in Drumm as modified with a spring that surrounds the valve as suggested by Legrand to insure that the valve is provided with the right amount of force to properly control the shut off of fluid at a specific pressure as such is merely a choice of mechanical expedients to locate the spring outside of the valve rather than below, as such would also decrease the chance the valve would actuate at an improper angle when the wider spring bottom would prevent this.

Response to Arguments

Applicant's arguments with respect to claims 1, 3, 5-8, 11, 12, 14, and 16-20 have been considered but are moot in view of the new ground(s) of rejection. As set forth above the finality of the previous office action was withdrawn, the above changes in the rejection were required by the amendment, and the rejection above now applies.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patents to Brault, Miyakawa, and Sasaki disclosing state of the art accumulators with non-bellows structure and thin metal layers.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

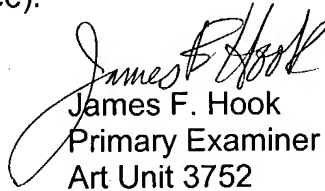
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James F. Hook whose telephone number is (703) 308-2913 until mid November at which point it will change to (571) 272-4903, and as of October 1, 2004 the examiner of this application will remain the same but the art unit designation number will change to 3754, please send any further correspondence after this date to the new art unit 3754. The examiner can normally be reached on Monday to Wednesday, work at home Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mar can be reached on (703) 308-2087. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


James F. Hook
Primary Examiner
Art Unit 3752

JFH